

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001909**Date Inspected:** 07-Apr-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 1400**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 100**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Chen Xie**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG deck panels**Summary of Items Observed:**

On this day CALTRANS OSM Quality Assurance Inspector (QA) Steve Hall was present during the times noted above for observations relative to the fabrication of the SAS Superstructure being performed by Zhenhua Port Machinery Company (ZPMC) at Changxing Island, in Shanghai, China. QA observed and/or found the following:

OBG bay 1 (Gantry 1)

Due to the fact that ZPMC ferry was not running this morning day shift QA was unable to observe PMT test panels being welded today. The following information was obtained from ABF Quality Control (QC) inspectors records. ZPMC qualified welding personnel performed the Gas Metal Arc Weld (GMAW) and Submerged Arc Weld (SAW) 2 Rib PMT# 1 for deck panels DP-490-001 and DP-301-001 on gantry #1. ZPMC welding personnel commenced welding PMT #1 for gantry 1 at 0807 hrs for the above mentioned deck panels. QC visually inspected and accepted 500mm segments of each weld on this PMT panel. ZPMC's QC Ultrasonic Testing (UT) technician ultrasonically inspected and accepted the same 500mm segments of each weld based on the depth of penetration acceptance criteria for closed Rib to deck plate Partial Joint Penetration (PJP) welds specified in the contract documents. Caltrans waived the UT for this PMT today. 2nd shift QA visually inspected this PMT panel after ZPMC had already commenced welding the production panels. QA laid-out, match marked and stenciled 5 macro specimens on each PMT rib. QA completed a U-Ribs PMT inspection report for this date and gantry using information obtained from QC. The report is on file in the Caltrans QA office. The welding parameters and welder ID's for Gantry 1 PMT #1 are as follows:

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### GMAW

Volts: 29.8 – 30.1 Amps: 351 – 368 Travel speed: 533mmpm

### SAW

Volts: 25.1 – 25.4 Amps: 676 – 683 Travel speed: 510mmpm

### Welder ID#'s

Weld joint 1: 059468

Weld joint 2: 059464

Weld joint 3: 059355

Weld joint 4: 059421

### Gantry 2

Due to the fact that ZPMC ferry was not running this morning day shift QA was unable to observe PMT test panels being welded today. The following information was obtained from ABF Quality Control (QC) inspectors records. ZPMC qualified welding personnel performed the Gas Metal Arc Weld (GMAW) and Submerged Arc Weld (SAW) 3 Rib PMT# 1 for deck panels DP-139-001 and DP-049-001 on gantry #2. ZPMC welding personnel commenced welding PMT #1 for gantry 2 at 0808 hrs for the above mentioned deck panels. QC visually inspected and accepted 500mm segments of each weld on this PMT panel. ZPMC's QC Ultrasonic Testing (UT) technician ultrasonically inspected and accepted the same 500mm segments of each weld based on the depth of penetration acceptance criteria for closed Rib to deck plate Partial Joint Penetration (PJP) welds specified in the contract documents. Caltrans waived the UT for this PMT today. 2nd shift QA visually inspected this PMT panel after ZPMC had already commenced welding the production panels. QA laid-out, match marked and stenciled 5 macro specimens on each PMT rib. QA completed a U-Ribs PMT inspection report for this date and gantry using information obtained from QC. The report is on file in the Caltrans QA office. The welding parameters and welder ID's for Gantry 1 PMT #1 are as follows:

### GMAW

Volts: 29.7 – 30.8 Amps: 358 – 374 Travel speed: 533mmpm

### SAW

Volts: 25.1 – 25.8 Amps: 675 – 682 Travel speed: 515mmpm

### Welder ID#'s

Weld joint 1: 059416

Weld joint 2: 059371

Weld joint 3: 059443

Weld joint 4: 059378

Weld joint 5: 059361

Weld joint 6: 062265

QA also observed ZPMC QC personnel perform 10% Magnetic particle Testing (MT) of fillet welds joining diaphragm plates to inside of U-Rib on the following Ribs: DP-298-001-012 and DP-406-001-016. The results of

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the MT appeared to comply with AWS D1.5 2002 and the contract documents.

QA visually inspected completed welds on deck panel DP-301-001. All welds that were inspected appeared to exhibit some degree of lack of fusion, overlap, oversize and/or under fill. All of the (PJP) welds joining U-Rib to deck plate on this panel do not comply with the visual acceptance criteria specified in AWS D1.5 2002 and the contract documents and are rejected. QA completed a Caltrans QA visual weld inspection report for the OBG deck panel mentioned above.

NOTE: ZPMC and/or ABF QC have not completed their visual inspection of this deck panel at this time.



### Summary of Conversations:

Only general conversations were held between QC inspectors and QA concerning this project.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Patrick Lowery (858)-344-2712, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Hall,Steven	Quality Assurance Inspector
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<b>Reviewed By:</b>	Cuellar,Robert	QA Reviewer
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